

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A substrate holder for supporting a substrate in a processing system and controlling the temperature thereof comprising:

a first heating element arranged in a first region of said substrate holder and configured to raise the temperature in said first region;

a second heating element arranged in a second region of said substrate holder and configured to raise the temperature in said second region;

~~at least one~~ a first cooling element arranged in said substrate holder opposing said first ~~and second~~ heating elements with a space therebetween;

a second cooling element arranged in the substrate holder opposing the second heating element with a space therebetween;

an insulating element arranged in said substrate holder interposed in the space between ~~the at least one~~ each cooling element and the opposing first and second heating elements,

wherein said insulating element is configured to control the transfer of heat from said substrate through said substrate holder to said at least one cooling element.

Claim 2 (Currently Amended): The substrate holder as recited in claim 1 further comprising a first intermediate space arranged between said first region and said second region, and configured to permit the transfer of heat between said substrate and said ~~at least one~~ cooling elements.

Claim 3 (Previously Presented): The substrate holder as recited in claim 1, wherein said second region is located concentrically around the first region which is centrally located, said substrate holder further comprising:

a third heating element concentrically arranged about said second heating element in a third region of said substrate holder and configured to raise the temperature in said third region.

Claim 4 (Original): The substrate holder as recited in claim 1, wherein said first and second heating elements comprise at least one of a resistive heating element, a heating channel, and a thermo-electric element.

Claim 5 (Currently Amended): The substrate holder as recited in claim 1, wherein said at least one cooling element comprises at least one of a cooling channel, and a thermo-electric element.

Claim 6 (Previously Presented): The substrate holder as recited in claim 1, wherein said insulating element comprises a gas gap coupled to at least one of a vacuum pump and a gas supply unit.

Claim 7 (Original): The substrate holder as recited in claim 1 further comprising at least one of an electrostatic clamp for clamping said substrate to said substrate holder, and a backside gas supply system for increasing the thermal conductance between said substrate and said substrate holder.

Claim 8 (Original): The substrate holder as recited in claim 1 further comprising at least one temperature sensing device.

Claim 9 (Original): The substrate holder as recited in claim 8, wherein said temperature sensing device comprises at least one of an optical thermometer, and a thermocouple.

Claim 10 (Currently Amended): The substrate holder as recited in claim 1 further comprising a controller coupled to at least one of said first heating element, said second heating element, said insulating element and said ~~at least one~~ cooling elements.

Claim 11 (Original): The substrate holder as recited in claim 1, wherein the first region is a central region and a second region is a peripheral region concentrically arranged about said first region.

Claim 12 (Original): The substrate holder as recited in claim 1, wherein the first and second regions are adjacent.

Claim 13 (Currently Amended): A method of controlling the temperature of a substrate using a substrate holder in a processing system comprising:

initializing one or more control parameters for controlling the temperature of said substrate using said substrate holder, said substrate holder comprising a first heating element arranged in a first region of said substrate holder, a second heating element arranged in a second region of said substrate holder, ~~at least one~~ cooling elements arranged in said substrate holder opposing each of said first and second heating elements with a space

therebetween, and an insulating element arranged in said substrate holder interposed in the space between each of the ~~at least one~~ cooling elements and the opposing first and second heating elements;

initiating a process in said processing system;
adjusting said one or more control parameters; and
terminating said process.

Claim 14 (Currently Amended): The method as recited in claim 13 further comprising a first intermediate space arranged between said first region and said second region, and configured to permit the transfer of heat between said substrate and said ~~at least one~~ cooling elements.

Claim 15 (Previously Presented): The method as recited in claim 13, wherein said second region is located concentrically around the first region which is centrally located, further comprising:

a third heating element concentrically arranged about said second heating element in a third region of said substrate holder.

Claim 16 (Original): The method as recited in claim 13, wherein said first and second heating elements comprise at least one of a resistive heating element, a heating channel, and a thermo-electric element.

Claim 17 (Currently Amended): The method as recited in claim 13, wherein said ~~at least one~~ cooling elements comprises at least one of a cooling channel, and a thermo-electric element.

Claim 18 (Previously Presented): The method as recited in claim 13, wherein said insulating element comprises a gas gap coupled to at least one of a vacuum pump and a gas supply unit.

Claim 19 (Original): The method as recited in claim 13 further comprising at least one temperature sensing device.

Claim 20 (Original): The method as recited in claim 19, wherein said temperature sensing device comprises at least one of an optical thermometer, and a thermocouple.

Claim 21 (Currently Amended): The method as recited in claim 13 further comprising a controller coupled to at least one of said first heating element, said second heating element, said insulating element, and said ~~at least one~~ cooling elements.

Claim 22 (Original): The method as recited in claim 21, wherein said controller facilitates at least one of setting, monitoring, adjusting, and controlling said one or more control parameters.

Claim 23 (Original): The method as recited in claim 13, wherein said one or more control parameters comprise at least one of a resistive heating element voltage, a resistive heating element current, a heating channel fluid flow rate, a heating channel fluid temperature, a thermo-electric element current, a thermo-electric element polarity, a gas gap gas type, a gas gap gas pressure, a cooling channel fluid flow rate, and a cooling channel fluid temperature.

Claim 24 (Original): The method as recited in claim 13 further comprising at least one of an electrostatic clamp for clamping said substrate to said substrate holder, and a backside gas supply system for increasing the thermal conductance between said substrate and said substrate holder.

Claim 25 (Original): The method as recited in claim 24, wherein said one or more control parameters comprise at least one of an electrostatic clamp voltage, a backside gas type, and a backside gas pressure.

Claim 26 (Original): The method as recited in claim 24, wherein said backside gas supply system is at least one of a two-zone backside gas supply system, and a three-zone backside gas supply system.

Claim 27 (Original): The method as recited in claim 13 further comprising:
initiating a pre-process in said processing system following said initializing said one or more control parameters.

Claim 28 (Original): The method as recited in claim 27 further comprising:
adjusting said one or more control parameters during said pre-process.

Claim 29 (Original): The method as recited in claim 27 further comprising:
adjusting said one or more control parameters following said pre-process, and preceding said process.

Claim 30 (Original): The method as recited in claim 13 further comprising:
initiating a post-process in said processing system following said terminating said process.

Claim 31 (Original): The method as recited in claim 30 further comprising:
adjusting said one or more control parameters during said post-process.

Claim 32 (Original): The method as recited in claim 30 further comprising:
adjusting said one or more control parameters preceding said post-process, and following said process.

Claim 33 (Original): The method as recited in claim 13, wherein the first region is a central region and a second region is a peripheral region concentrically arranged about said first region.

Claim 34 (Original): The method as recited in claim 13, wherein the first and second regions are adjacent.

Claim 35 (Currently Amended): The substrate holder of claim 1, wherein said insulating element comprises:
a first controllably insulating element interposed between the first heating element and the ~~at least one~~ cooling element in the first region; and
a second controllably insulating element interposed between the second heating element and the ~~at least one~~ cooling element in the second region,

wherein said first controllably insulating element is configured to control the transfer of heat from said substrate through said first region of said substrate holder to said ~~at least one~~ first cooling element, and said second controllably insulating element is configured to control the transfer of heat between said substrate through said second region of said substrate holder to said ~~at least one~~ second cooling element.

Claim 36 (Previously Presented): The substrate holder of claim 1, wherein said insulating element comprises a single insulating element.

Claim 37 (Previously Presented): The substrate holder of claim 1, wherein said insulating element comprises a plurality of insulating elements that are dependently controlled.

Claim 38 (Currently Amended): The method of claim 13, wherein said insulating element comprises:

a first controllably insulating element interposed between the first heating element and the ~~at least one~~ first cooling element in the first region; and

a second controllably insulating element interposed between the second heating element and the ~~at least one~~ second cooling element in the second region.

Claim 39 (Previously Presented): The method of claim 13, wherein said insulating element comprises a single insulating element.

Claim 40 (Previously Presented): The method of claim 13, wherein said insulating element comprises a plurality of insulating elements that are dependently controlled.